UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,943	09/12/2003	Neil Birkett	9931-040	8373

20575 7590 08/24/2007

MARGER JOHNSON & MCCOLLOM, P.C.
210 SW MORRISON STREET, SUITE 400
PORTLAND, OR 97204

EXAMINER	
PANWALKAR, VINEETA S	
ART UNIT	PAPER NUMBER
2611	
MAIL DATE	DELIVERY MODE
08/24/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/661,943	ICEFYRE SEMICONDUCTOR CORPORATION	
	Examiner	Art Unit	
	Vineeta S. Panwalkar	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 January 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see remarks, filed 1/29/07, with respect to the rejection(s) of claim(s) 1 and 15 are under 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of previously cited reference Yang et al. (US 2002/0168034 A1, hereinafter Yang), applicant's own admitted prior art (hereinafter, AOAPA), McCarthy, Jr. et al. (US 6704353 B1, hereinafter, McCarthy).

Claim Objections

2. Claim 7 is objected as to minor informalities. It is suggested that "PSIS" in line 9 of the claim be replaced by ---PSK---. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to

be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1, 2, 7, 11, 12, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over yang in view of AOAPA and McCarthy.

3a. Regarding claim 1, Yang discloses in a digital wireless receiver (paragraph [004]), a method of detecting the presence of a data packet (Paragraph [0048], wherein burst detection is interpreted as claimed packet detection) in a received radio frequency (RF) signal comprising the steps of:

- down-converting said RF signal into in-phase (I) and quadrature (Q) baseband signals (Fig. 3 and paragraphs [0049]-[0050]);

- comparing said I and Q baseband signals to a reference signal via a complex correlator; detecting a peak of said complex correlator output; and in response to said peak is being above a predefined threshold, indicating that a data packet has been received (Parargraph [0080]).

Thus, Yang discloses all the limitations claimed, but fails to explicitly disclose removing DC offset and claimed modulating and normalizing of I and Q signals.

However, as AOAPA, it is well known that in a receiver, DC offset cancellation is required and performed so as to remove the DC offset that arises from locan oscillator leakage (Pages 6 and 7 of specification, paragraph [0018]).

Also, in the same field of endeavor, McCarty shows a receiver wherein amplitude normalization and modulation is performed on I and Q baseband signals (Fig. 1 and column 5, line 15 – column 6, line 13 and column 4, lines 30-38).

Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use amplitude normalized I and Q baseband signals as disclosed by McCarthy because it ensures accurate decoding of received signal by removing effects of channel induced distortion (Column 2, lines 25-44).

3b. Regarding claim 2, Yang, AOAPA and McCarthy show all the limitations claimed. McCarthy further shows amplitude normalization performed by

mapping I and Q baseband signals to a quantized phase shift keying (PSK) constellation (Fig. 1 and column 5, line 15 – column 6, line 13 and column 4, lines 30-38, wherein amplitude normalization of the QAM signal is equivalent to claimed mapping to quantized PSK).

3c. Regarding claim 7, refer to rejection of claims 1 and 2 above. (Also, see paragraph [0080] of Yang, wherein pattern detection is interpreted as claimed determining of presence of signature).

3d. Regarding claims 11 and 12, refer to rejection of claims 1 and 2 above.

3e. Regarding claims 15 and 16, refer to rejection of claims 1 and 2 above. (Also, see paragraph [0080] of Yang, wherein pattern detection is interpreted as claimed determining of presence of signature).

4. Claims 3, 5, 6, 8, 9, 13, 14 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang in view of AOAPA and McCarthy as applied to claims 2, 7, 12 and 16 above, and further in view of Serra et al. (US 5536902, hereinafter, Serra)

4a. Regarding claims 3, 8, 13 and 17, Yang further shows determining if a data packet containing information bits is present (Paragraphs [0088] and [0089].

Thus, Yang, AOAPA and McCarthy show all the limitations claimed, but fail to explicitly show claimed conversion of complex to polar value.

However, in the same field of endeavor (of analyzing or identifying data), Serra shows the use of complex to polar co-ordinate converter so as to obtain the magnitude of the polar value and use it for peak detection (Column 22, lines 34-40).

It would have been obvious to a person of ordinary skill in the art to use the complex to polar co-ordinate conversion so as to simplify the peak detection technique.

4b. Regarding claim 5, AOAPA further shows that peak detectors may be employed as envelope detectors (Page 8. paragraph [00021] of specification).

4c. Regarding claims 6 and 14, Yang further shows that thresholds are calculated so as to avoid "false alarms" (Paragraphs [0043] and [0100]). Thus, Yang's predetermined threshold is interpreted as claimed minimum threshold (Paragraph [0080]).

4d. Regarding claims 9 and 17, McCarthy also discloses that received RF signal comprises QAM signal (Column 3, lines 25-38).

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yang in view of AOAPA and McCarthy and further in view of Serra as applied to claim 3 above, and further in view of Gunzelmann et al. (US 2001/0028673 A1, hereinafter, Gunzelmann)

5a. Regarding claim 4, Yang, AOAPA, McCarthy and Serra show all the limitations claimed, but fail to explicitly disclose the method for calculating magnitude of a value.

In the same filed of endeavor, however, Gunzelmann shows how squares of the magnitudes are calculated (claimed (mag)^2 formula) (Paragraph [0027]).

It would have been obvious to a person of ordinary skill in the art to use the squared magnitude formula because this improves reliability in power calculations (Paragraph [0027]).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Critchlow (US 5276706) shows pattern recognition using complex correlator and peak detector.
- Chalmers (US 6141372) shows complex correlation and DC offset removal in a receiver.

- Tabatabaei (US 6784740 B1) shows use of peak detector as envelope detector.

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vineeta S. Panwalkar whose telephone number is 571-272-8561. The examiner can normally be reached on M-F 8:30-5:00. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MOHAMMED GHAYOUR
SUPERVISORY PATENT EXAMINER

VP